

# THE MINERAL INDUSTRIES OF INDONESIA AND EAST TIMOR (TIMOR-LESTE)

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## INDONESIA

Despite the Severe Acute Respiratory Syndrome (SARS) outbreak in the Asia and the Pacific region and the August terrorist attack in the capital, Indonesia's gross domestic product (GDP) grew by 4.1% in 2003 compared with that of 2002; this rate of growth was higher than the Government's target of 3.9%. Indonesia had not recovered completely from the 1997 financial crisis. With the assistance of the International Monetary Fund and the implementation of new macroeconomic policies, the inflation rate slowed to 5.1% by yearend; interest rates fell; and the rupiah stabilized against the U.S. dollar. Private and Government consumption remained the principal drivers of growth. Private consumption accounted for 2.8% of the GDP growth. Net foreign direct investment continued to decline in 2003. The Capital Investments Coordinating Board approved \$13.2 billion of foreign investment projects in 2003, of which only 38% may be carried out. The declining investment, when correlated with the World Economic Forum 2003 report, indicated that Indonesia ranked 72 out of 102 countries in the growth competitiveness index (a measure that is based on an assessment of each country's macroeconomic environment, the condition of its public institutions, and its use of technology). In terms of its business competitiveness, Indonesia ranked 60 among 101 countries considered in the report; this ranking placed it ahead of only three other countries in the Asia and the Pacific region: the Philippines (64), Pakistan (72), and Bangladesh (86). Larger amounts of the foreign investment flowed to countries with a more attractive economic climate, such as China, Thailand, and Vietnam (Bank Indonesia, 2004, p. 7; Capital Investments Coordinating Board, 2004<sup>§</sup>; Jakarta Post, 2004g<sup>§</sup>).

Indonesia's principal mineral resources are coal, copper, gold, nickel, oil, and tin. Although labor-intensive agriculture continued to have a dominant role in the country's economy, revenues from the mineral sector provided about 25% of the country's budget. The mining sector engaged about 0.5% of the labor force and contributed about 3% of GDP. In some areas of the country, the contribution of the mining sector to local development was very significant. In North Luwu, South Sulawesi Province and Mimika, Papua Province, for example, the mining sector accounted for 80% and 97%, respectively, of the local GDP. The mining sector helped in the development of many areas of Indonesia that otherwise would not have been developed.

New tax rules and environmental issues were matters of concern to the mining sector. The cumulative tax increase could be as high as 60%. New levies by regional and local governments could cause production costs to increase by an additional 6%. During the past 5 years, investment in Indonesian mining has decreased by 90% to \$200 million in 2003 compared with \$2 billion in 1998. The Capital Investments Coordinating Board approved only seven new foreign mining projects and two foreign expansion projects in 2003 for a total value of \$14.9 million. Legal and policy uncertainties, lingering labor conflicts, and the chaotic implementation of regional autonomy were mainly responsible for this drop in investment in the mining sector. Security conditions also worried many foreign investors, especially in the Provinces of Aceh and Papua. During the past several years, mineral outputs remained stable despite the unfavorable investment conditions. The continuing lack of investment will have a negative impact on future mineral production and state revenue if the situation does not change (MiningIndo.com, 2003b<sup>§</sup>).

## Government Policies and Programs

Since the financial crisis of 1997, business investments in new plants and equipment have been slower than expected. Weak investment reduced the long-term potential for growth and higher-income employment. The political changes that accompanied the movement away from decades of authoritarian rule toward a market-oriented economy and the development of democratic political institutions created uncertainty with respect to decisionmaking, which discouraged new commitments from foreign and domestic investors. Investment was also hindered by the country's weak banking sector and legal framework (PricewaterhouseCoopers, 2003). Since the implementation of the No. 22/1999 (regional autonomy) law and No. 25/1999 (fiscal decentralization) law in 2001, there had been misunderstandings about the operation and distribution of gas, mining, and oil revenue such as land rent, royalties, and taxes. The No. 18/2000 [value-added-tax (VAT)] law, which took effect on January 1, 2001, classified coal, gold, and silver as non-taxable commodities. Any taxable expenditures that were incurred to produce these commodities were nonrefundable and could increase production costs by 10% for many companies. As a result, many companies may no longer be able to operate economically and could close. The Ministry of Finance planned to propose amendments to the tax law in 2004. The Government also planned to revise laws on fiscal balances, regional autonomy, and regional balance. The revised laws are intended to clarify the role of provinces and, gradually, to achieve fiscal equality between the Central and Provincial Governments (PricewaterhouseCoopers, 2003). In addition, the Capital Investment Coordinating Board urged the Government to provide a tax holiday to attract mining investors. The investment climate in Indonesia was unattractive compared with other countries. The proposed tax holiday would create job opportunities and assist economic recovery (Petrominer, 2004j).

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<sup>1</sup> References that include a section mark are found in the Internet References Cited section.

In 2003, the Government changed the Government/oil company production-sharing split to encourage investors to participate in the oil and gas upstream activities. In 2002, only one company signed an oil and gas production-sharing contract. In 2003, the production-sharing split was changed from 80/20 (or 85/15, depending on the location of the lease block) to 65/35 for oil and from 60/40 (or 70/30, depending on the location of the lease block) to 55/45 for gas; 18 contracts were signed. The Government intended to provide the same incentives to 10 new blocks in 2004. To control the sale of the lease block area, no company was allowed to sell more than a majority (51%) of its shares during its first 3 years under the contract (Petrominer, 2004j).

Law No. 41/1999 banned opencast mining in protected forest areas; according to the law, however, the House of Representatives could grant a special permit to allow mining in protected forest areas. The House of Representatives and the Ministry of Energy and Mineral Resources jointly established a team to evaluate how the forest law affected mining companies. The team recommended that 22 mining companies be allowed to mine in protected forest areas. The recommendation was based on the companies' stage of mining, their disbursed investment value, and the impact of their operations on the environment. The Government issued the Government Ordinance in Lieu of Law (Perpu) No. 1/2004 in November 2003; the President signed the Perpu in 2004 to allow 13 companies to resume their operations in protected forests. (A Perpu is similar to a law, but issuance of a Perpu does not require House approval.) These 13 companies were PT Antam Tbk (Bulit N. Maluku and Bahobulu Southeast Sulawesi), PT Freeport Indonesia Co. (Freeport) (Mimika and Puncak Jayawijaya in Papua), PT Gag Nickel, PT International Nickel Indonesia TBK (PT Inco), PT Indominco Mandiri, PT Interex Sacra Raya, PT Karimun Granite, PT Natarang Mining, PT Nusa Halmahera Minerals, PT Sorik Mas Mining, PT Telsart Tambang Kencana, and PT Weda Bay Nickel. These 13 have proven reserves that were considered to be economic to mine. Although the area that had been explored was large, the total area recommended for exploitation by the 13 companies was only 2.07% of the total protected area. A coalition of 11 nongovernmental organizations urged the Parliament not to adopt Perpu No.1/2004 into law because the measure was contradictory to article 22 of the 1945 Constitution, as amended. The coalition argued that open pit mining in protected forests would hamper the economic growth of 25 regencies/municipalities of the country. The remaining nine companies that were originally recommended to receive special licenses were not given licenses to resume activities in protected forests because no proven reserves had yet been discovered in their areas. Other companies were still being studied as well (Petrominer, 2004g; Jakarta Post, 2004c§).

In 2003, after 4 years of discussion, the draft of a new mining law that would replace the general mining law No. 11/1967 was completed and submitted to the State Secretariat for approval before submission to the House of Representatives to be legislated into law. Replacement of the No. 11/1967 law was considered to be necessary because the old law was not compatible with current conditions in the mining sector, which had changed considerably during the past several years. The Ministry of Energy and Resources withdrew the draft from the State Secretariat at yearend 2003, however, and planned to set up a technical team to redraft the proposed law (Petrominer, 2004e).

Since the regional autonomy law took effect in 2001, foreign investors have complained about the large number of confusing permits and levies. In 2003, the President signed a decree to centralize the approval and issuance of mining permits to foreign and domestic investors and removed the power of regional officials to grant such approvals. The House of Representatives planned to revise the regional autonomy law in 2004 (MiningIndo.com, 2003e§; Jakarta Post, 2004d§).

Loss of revenue caused by illegal mining has been a significant problem for Indonesia. The Government estimated that the Central and regional Governments lose at least \$118 million in revenues and taxes per year. Illegal miners focused their activities on three commodities—coal, gold, and tin—because these minerals were relatively easy to process. Owing to an oversupply of tin in the world and the resultant low tin price, the state-owned tin company PT Tambang Timah Tbk (Timah) was in a position of financial loss in the early 2000s. In 2002, the Government banned the export of tin ore and cracked down on the export of tin by illegal miners; as a result, tin prices increased on the world market. Illegal mining also caused environmental damage. The Australian Government urged the Indonesian Government to halt the illegal goldmining activities on Halmahera Island where the Australian company Newcrest Mining Ltd. mined. In South Kalimantan, coal producers spent millions of dollars to rehabilitate the land destroyed by illegal miners. During the past several years, Indonesia produced a total of about 100 million metric tons per year (Mt/yr) of coal by licensed coal producers; illegal miners extracted an estimated additional 25 Mt/yr of coal. Most of the illegal miners operated on the coal producers' properties. At the Tanah Bumbu coal mine, which was operated by the PT Arutmin Indonesia at Satui, illegal miners produced about 40,000 metric tons (t) per night; Arutmin's production from that area, however, was only 9,000 tons per day. Illegal miners also sold their coal at prices that were about 25% lower than those charged by legal companies (Petrominer, 2004c, h; MiningIndo.com, 2003d§).

## Trade

Indonesia liberalized its trade regime and took a number of important steps to reduce protectionism. In the early 1990s, the Government initiated a series of annual deregulation measures that were designed to lower tariff rates gradually. As of January 2003, about 70% of Indonesia's tariff rates ranged between 0% and 5%. In the Uruguay Round market access negotiations, Indonesia committed to bind 94.6% of its tariff schedule; most tariffs were bound at 40%. Products for which tariff bindings exceeded 40% or that remained unbound included automobiles, iron and steel, and some chemical products. On January 1, 2002, Indonesia fully implemented the final stage of its commitments under the Association of Southeast Asian Nations (ASEAN) Free Trade Area Agreement. In line with this Agreement, the Government categorized tariffs into international non-ASEAN tariffs and ASEAN tariffs. Most non-ASEAN products have tariffs of 0%, 5%, or 10%, except for such sensitive items as automotive goods and alcohol.

ASEAN tariffs, which are tariffs on products that are of at least 65% ASEAN origin and are therefore subject to the ASEAN Free Trade Agreement, were 0%, 2.5%, and 5%.

In 2003, Indonesia's exports increased by 6.8% to \$61.0 billion and imports increased by 3.1% to \$32.4 billion. Oil and gas exports accounted for 20.7% (\$13.6 billion) of the export total. Indonesia increased its oil and gas imports to \$7.5 billion or 23.3% of the import total. The value of aluminum exports increased by 5.3% to \$1.2 billion, but the value of copper exports decreased by 33% to \$2.0 billion as a result of the landslide at the Grasberg mine. Coal exports increased to 83 Mt; Asia was the leading market for Indonesian coal. Because the Chinese Government restricted coal exports from its country, coal prices in the Asian market increased to \$33 per ton from \$27 in the fourth quarter of 2003. Machinery and mechanical equipment was the leading non-oil and gas import category and accounted for 12.9% of the total value of imports. The value of iron and steel imports decreased by 8.6% to \$2.0 billion because the Government restricted the importation of steel products (Central Bureau of Statistics, 2004).

## Commodity Review

### Metals

**Aluminum.**—PT Aneka Tambang Tbk (PT Antam) completed all mandated studies for the Tayan chemical-grade alumina project in Tayan, West Kalimantan Province. Of the \$220 million needed to fund the project, PT Antam planned to provide 30% through investment equities; the remaining 70% would be raised through formation of a joint venture. Initially, Japan's Alumina Chemical Co. expressed interest in joining the project but later withdrew its name from consideration. PT Antam also considered Malaysia Mining Corporation Bhd of Malaysia and Showa Denko Co. of Japan as potential partners. Under this arrangement, PT Antam would have a 40% share of the new joint venture and the two partners would each have a 30% share. PT Antam also requested that the Government reduce its holdings of PT Antam to 51% from 65%. The bankable feasibility study for the project was completed in December (Petrominer, 2004i).

**Copper.**—In 2003, Freeport continued to focus on the exploration of block A targets that had high potential to add to reserves. Additional probable and proven reserves of 5,700 t of contained copper metal, 3,900 t of silver, and 520 t of gold were discovered in block A in 2003. Freeport planned to invest \$13 million on drilling below its Mill Level Zone in 2004. Field exploration activities outside the mining operations area were suspended because of safety and security issues. Another uncertainty was related to the mining rights in restricted forest areas covered by contracts of work. Freeport's partners, PT Nabire Mining and Eastern Minerals, also suspended their exploration activities in block B in 2003 and both applied to resume exploration activities in 2004. On October 9, 2003, a landslide at the southern part of Freeport's Grasberg Mine left eight people dead. Operations at the Grasberg Mine were suspended. On December 12, another landslide happened at the same location. The company decided to suspend all mining operations until the second quarter of 2004. Mining operations in 2004 will be limited to work in the company's Deep Ore Zone underground mine and extraction of low-grade ore from the open pit. Mining at the high-grade ore zone will be deferred until 2005 to ensure the stability of the pit wall. As a result of the landslides, production from the open pit area declined by more than 17% in 2003 compared with that of 2002. Shipments of copper concentrates to China and Japan were suspended until mid-2004 (Petrominer, 2003, 2004b).

In 2003, Freeport and PT Indocopper Investama (Indocopper) informed the Indonesian Government that they planned to merge. Freeport McMoRan Copper & Gold Inc. of the United States held 81.28% of Freeport shares, and Indocopper, 9.36%. The remaining shares were owned by the Indonesian Government. The merger was intended to reduce administrative and operational costs. Under the Contract of Work, the merger must be approved by the Indonesian Government. Shareholders approved the merger during an extraordinary general meeting. The Government wanted the company to divest its shares to local investors. The Ministry of Finance and the Ministry of Energy and Mineral Resources reviewed the request; the decision was pending and was to be announced in 2004 (MiningIndo.com, 2003a§).

In 2003, owing to lower copper ore grades and recovery rates, the production of copper from Indonesia's second-leading copper- and gold-producing mine, Batu Hijau in Sumbawa Island, West Nusa Tenggara Province, decreased by 3.5% to 287,892 t. Because of higher grades, gold output increased slightly. As a result of higher metal prices, an increase in byproduct gold credits, and lower smelting and refining charges, the net income of PT Newmont Nusa Tenggara increased in 2003. Exploration and drilling at satellite copper and gold prospects near Batu Hijau continued in 2003. Nongovernmental organizations from East Lombok urged the Government to investigate whether the submarine sea-tailing disposal from Batu Hijau mine could have caused severe health problems for people who lived in the area. The concentration of heavy metals in the soil and water at nearby areas was higher than the standard levels. The Government decided to send an investigation team to the area in 2004 (MiningIndo.com, 2004b§).

**Gold.**—Kalimantan Gold Corp. Ltd. of Canada resumed its exploration work on the Mansur copper/gold prospect in August 2002. The Mansur prospect, which is located in central Kalimantan, was discovered in 1984. Geophysical data indicated that the area potentially contained high metal (copper and gold) content at depth. Kalimantan Gold also held a 1,242 square kilometer (km<sup>2</sup>) concession area in central Kalimantan. The Baroi prospect was under the sixth generation Contract of Work. During early reconnaissances in 1985 and 1997, the company discovered high-grade mineralization in the area. When the company restarted exploration at the prospect in November 2002, it identified high-grade copper and gold mineralization over an area that covered 26 km<sup>2</sup>. In 2003, exploration work was constrained by a shortage of funds; as a result, the company decided to focus on the Baroi prospect. The Baroi was divided into four zones; the company concentrated its work in the Far East Zone and conducted 22 drillings. Drilling of six holes to 300 meters (m) depth was completed during 2003 (Kalimantan Gold Corp. Ltd., 2004).

PT Nusa Halmahera Minerals (a joint venture of Newcrest Ltd., 82.5%, and PT Antam, 17.5%) completed initial drilling in the Kencana deposit in North Maluku Province. High-grade gold [up to 600 grams per metric ton (g/t)] was recovered from the drill core. The epithermal gold mineralization at Kencana is in a shallow to moderately northeast-dipping quartz breccia vein hosted in andesite and volcanoclastics (MiningIndo.com, 2004a\$).

**Iron and Steel.**—Indonesia produced less than 3 million metric tons per year (Mt/yr) of steel and consumed about 4 Mt/yr. In November 2002, the Ministry of Industry and Trade issued a decree to limit the quantity of imported steel products. Steel producers were allowed to import hot-rolled and cold-rolled coils as raw materials or as supplements for production purposes. Imported coils were not allowed to be sold in domestic markets or to be transferred to other companies. The aim was to prevent imported coils, which were cheaper than local coils, from entering the domestic market. The Government also increased the tariff rates for hot-rolled and cold-rolled coils to 20% and 25%, respectively, for 1 year. Steel products were mainly from Japan, the Republic of Korea, and Russia. After months of public debates, the Government announced that the import tariffs on hot-rolled and cold-rolled coils would be eliminated for 1 year starting on April 1, 2004. Local steel producers objected to the policy changes because such changes would hurt their business. The downstream steel producers were in favor of the changes because the shortage of raw material had caused a decline in capacity utilization rates. Some plants operated at about 40% of their output capacities. Higher energy costs also contributed to the decline in production (SEAISI Newsletter, 2003; Jakarta Post, 2004f\$).

Indonesia's only integrated steel producer, state-owned PT Krakatau Steel, planned to increase its steel output to 5 Mt/yr by 2008 to meet increasing domestic demand for hot-rolled coil, plate, and wire. Krakatau had the capacity to produce 1.9 Mt/yr of slab and 500,000 t/yr of billet from its direct-reduced iron and electric arc furnace processes. The company imported its iron ore pellet mainly from, in order of amount imported, Brazil, Chile, and Bahrain and considered sourcing pellets from Australia in its expansion plan. Krakatau will announce its decision in 2004 after consultation with the Government. Krakatau sold 75% of its steel output to local customers. Owing to increased domestic demand, Krakatau announced that it would export only 10% of its steel output in 2004 (Metal Bulletin, 2004).

**Nickel.**—Owing to increased demand, the supply of nickel continued to tighten in 2003 as China and the Republic of Korea expanded their stainless steel output capacities; as a result, the price of nickel in the world market rose by 30% at yearend. Despite an increase in production costs, the net income of PT Antam and PT Inco increased sharply in 2003. In 2003, PT Antam's production reached only 89% of its target for contained nickel in ferronickel. PT Inco's nickel-in-nickel-matte production increased by 18% in 2003, and its net profit increased to \$104.19 million in 2003 compared with \$30.28 million in 2002 (Jakarta Post, 2004a\$, e\$).

In November, PT Antam's partner BHP Billiton Ltd. announced that it had no plan to mine nickel on Gag Island, which is located on the western tip of the Raja Ampat archipelago and was being considered for nomination as one of four marine World Heritage sites in Indonesia. The company's exploration site was located in a restricted forest area and the development of a nickel laterite deposit in the area was therefore an environmentally sensitive issue. Studies associated with the baseline environmental and social impact assessment were suspended. PT Antam received \$60 million in loans from Bank Central Asia to fund the company's ferronickel expansion project. The company also issued a seven-year note worth \$200 million for the project. On October 3, the construction of the company's FeNi III smelter at Pomalaa, South Sulawesi, was begun. The FeNi III smelter was to be built by an unincorporated consortium of Japan's Kawasaki Heavy Industries, Ltd. and Mitsui Co. Ltd. On November 14, PT Antam signed a contract with Waertsila Oyj of Finland to build a diesel-generated powerplant to power the smelter. PT Antam continued infill drilling activities of lateritic nickel prospects at the Buli, Halmahera, Mandiodo, and Tapunopaka prospects. The development of these nickel deposits was expected to reduce transportation costs to the Pomalaa processing facility (PT Aneka Tambang Tbk, 2004).

**Tin.**—Indonesia was the second-leading tin-producing country in the world behind China. The Indonesian tin sector was dominated by two companies—PT Koba Tin [a joint venture of Timah and Malaysia Smelting Corp. (MSC)] and PT Tambang Timah (PT Timah) (a subsidiary of Timah). In 2002, the Government decided to ban the export of tin ore and concentrates; as a result, the supply of tin tightened in Southeast Asia. In 2003, the local government in Bangka issued several tin operating licenses to locals. Seven small tin smelters were put into operation in Bangka Island. Owing to increased tin prices and tight global supplies, traders exported tin ore and concentrates illegally to Malaysia and Singapore. Because of illegal trading, the supply of tin concentrates was tightened in the domestic market and affected Koba and PT Timah operations. In 2003, the output of tin metal from PT Timah decreased by 20% compared with that of 2002. PT Timah exported 95% of its tin output. Each month, from about 150 to 200 t of refined tin with a minimum purity of 99.85% was sold to Singapore dealers from small tin producers in Bangka. These new smelters could not sell their products directly on the international market because they did not have brand names. Singapore-based traders resold the tin to major smelters in Malaysia and Thailand (Yahoo Finance, 2004\$).

MSC and PT Mitra Stania Prima signed a joint exploration and mining cooperation agreement in Bangka Island. PT Mitra held exploration and mining permits in an area of 4,039 hectares in Banka Island. MSC set up a wholly owned subsidiary, Penanaman Modal Asing (PMA), to oversee the tin mining activities in Indonesia. In 2002, MSC acquired 75% interest in Koba. Under the terms of the agreement, all exploration and mining works in the area would be carried out by PMA. Under the existing law, the exploration and mining permits were issued to Indonesian individuals and entities. Foreign companies could participate in the exploration and mining by cooperation with the respective permit holders. The exploration and mining permits could continue to be owned by PT Mitra until the eighth-generation Contract of Work is finalized by the Government and the permits are transferred to PMA. MSC allocated \$1.76 million for drilling and exploration in 2004 and 2005. PT Mitra could acquire 25% equity in the PMA (MiningIndo.com, 2003c\$).

## *Industrial Minerals*

**Cement.**—The Indonesian cement sector was dominated by the following producers (by order of size): PT Semen Gresik Group, which included PT Semen Padang and PT Semen Tonasa; PT Semen Cibinong; PT Indocement Tunggul Prakarsa; and PT Semen Andalas Indonesia. These producers accounted for 93% of the country's cement production. According to the Indonesia Cement Association, domestic demand for cement was 27.54 Mt in 2003, which was slightly higher than the 27.23 Mt in demand during 2002. As Indonesia's economy slowly recovered and development activities such as housing construction improved, operating on the margin became an important challenge for domestic producers. During the past 4 years, production costs increased more rapidly than selling prices. In 2003, the utilization rate of cement plant capacity was less than 78%. To anticipate future demand for cement, PT Semen Padang planned to construct a 2.3-Mt/yr cement plant in West Sumatra. The company had a current installed capacity of 5.24 Mt/yr. The cost of the new plant was estimated to be \$234 million, and the construction would take 3 years to complete. The new plant was to be known as the Indarung VI project (Industry Canada, 2004§; Jakarta Post, 2004b§).

**Diamond.**—BM Diamondcorp Inc. of Canada completed a feasibility study at the Cempaka diamond project, which is located in the Danau Seran area of Borneo Island in southeastern Kalimantan. PT Galuh Cempaka (Diamondcorp, 80%, and PT Antam, 20%) would be the operator for this project. Diamondcorp bought the asset from Rio Tinto Plc and Malaysian Mining Corp. Under the terms of agreement, Diamondcorp would pay a total of 1.6% of gross earnings to these companies. The feasibility study concluded that the Cempaka project could be economically developed. The area was projected to have a recoverable diamond resource of 633,450 carats, which was sufficient to support 16 years of mining. Diamondcorp also conducted a feasibility study on the Bobaris block property, which was discovered by Dutch geologists during the 1920s in the Sungai Pinang area of the Meratus Range in southeastern Kalimantan. BM Diamondcorp also completed an environmental impact study, which was submitted to local and regional governments for approval. The working capital that Diamondcorp acquired was insufficient to put the Cempaka project into production and the company continued to pursue additional funding for the project (BM Diamondcorp Inc., 2003).

## *Mineral Fuels*

**Coal.**—Indonesia is rich in coal resources. In 2003, coal output increased to 114.0 Mt, which was an increase of more than 10% from that of 2002. Owing to increased demand for coal in Asia, output was expected to increase to 135 Mt in 2004 and to 150 Mt in 2006. As the coal price rose on the international markets, especially in the last quarter of 2003, the Chinese Government restricted coal exports from China. Indonesia's coal producers increased their coal exports by 15% to 85.7 Mt in 2003 and were expected to increase exports to 99 Mt in 2004. Coal exports to Japan and Taiwan accounted for 40% of the 2003 total. During the year, domestic coal consumption increased by 5% to 30.7 Mt. Powerplants consumed about 64% of the total domestic demand, and cement producers, 16%. Domestic coal demand was expected to reach 32.5 Mt in 2005. Because of the desire to take advantage of the price difference between the international and domestic markets, Indonesia's coal producers preferred to export their output instead of selling it to domestic consumers. When state-owned PT Tambang Batubara Bukit Asam (PTBA) experienced transport problems shipping its coal from its South Sumatra mine to West Java's powerplant, East Kalimantan coal companies were reluctant to provide coal for the powerplant because shifting potential exports to domestic use would hurt their profits. As a result of reducing electricity-generating output, the frequency of rotating power outages increased on the Java-Bali grid. The Indonesian Coal Association urged the Government to enact a policy that requires coal producers to meet domestic demand (Petrominer, 2004h; U.S. Embassy Jakarta, 2004a).

Indonesia's second-leading coal producer, PT Kaltim Prima Coal Co. (KPC), which was jointly owned by PT Rio Tinto Indonesia (50%) and BP Amoco (50%), agreed to divest a total of 51% shares of its equity to local buyers. The share offer was to be based on the fair market value. The 100% share price was valued at \$822 million. The divestment of 51% of KPC shares was completed in 2003. Twenty percent of shares went to the Central Government's PTBA and 31% went to the regional governments. Of the 31% regional shares, the East Kutai regency's company Perusahaan Daerah Pertambangan Energi Kutai Timur received 18.6% and the East Kalimantan Provincial Government's Melati Bhakti Satya received 12.4%. The Commission VIII of the Parliament urged KPC to sell another 32.4% of its shares to Indonesian companies in 2004. KPC planned to increase coal output to 25 Mt in 2004 and 30 Mt in 2005. Two new coal mines, Melawan and Bengalon, were expected to come into operation in 2004 and 2005, respectively (Petrominer, 2004j).

Owing to a financial contract disagreement, PTBA cancelled a cooperation agreement with China National Technology Import Export Corp. to develop an underground coal project in the area of Ombilin, West Sumatra Province. Opencast coal resources in the Ombilin area have been gradually depleted. PTBA planned to increase coal production in the Ombilin area to meet domestic demand. In 2003, PTBA produced 10.0 Mt of coal from its mines in Bukit Kendi, Ombilin, and Tanjung Enim and planned to increase production to 10.3 Mt in 2004. The company also planned to acquire six small coal mines in Kalimantan during 2004; together, the six mines had total coal reserves of 20 Mt. PTBA geologists discovered an additional 84 Mt of coal resources in Bukit Bunian Sukamerindu in the Lahat regency of South Sumatra. The heat value of the coal was 6,800 kilocalories per kilogram; the sulfur content was less than 1%; and the ash content, less than 4% (Petrominer, 2004f).

**Oil and Gas.**—In 2003, Indonesia produced an average of 1.15 million barrels per day (Mbbbl/d); this was a decline of 8% from the average of 1.25 Mbbbl/d produced in 2002 and was also lower than the Government's 2003 target of 1.27 Mbbbl/d. It was the 10th straight year of decline in oil output. In order of production output, three producers—China National Offshore Oil Co., Exspan Nusantara, and PT Caltex Pacific Indonesia—accounted for 95% of the total decline. Aging oilfields, lower exploration investment,

and regulation and policy uncertainties were the main reasons for the decline of oil production. During the past several years, foreign companies have been reluctant to explore for new oilfields. More than 80% of the country's oil reserves were from oil block concessions that were signed in the 1970s. Blocks signed after 1990 accounted for only 5% of oil reserves. Foreign oil companies reduced their drilling expenditures during the past several years. The number of wells drilled decreased to 54 in 2003 from 102 in 2002. Oil production was expected to continue to decline in 2004 and oil analysts predicted that, because of declining production and rising consumption, Indonesia would become a net oil importer within the next few years. Indonesia's natural gas output increased by 4% to 89.3 billion cubic meters in 2003 and supplied 26% of the world's liquefied natural gas (LNG) from two production centers at Arun in Aceh and Bontang in East Kalimantan. The Government estimated that domestic natural gas consumption would increase by an average of 9% per year. The state-owned utility company Perusahaan Listrik Negara (PLN) planned to reduce costs and harmful emissions by increasing natural gas use from 21% to 40% by 2015. Natural gas consumption by powerplants could increase to 105 million cubic meters per day in 2015 from 23 million cubic meters per day in 2003. Investment in oil and gas exploration and development decreased sharply during the past 5 years. In 2003, the Government signed 15 new oil exploration block contracts, which was up from 1 in 2002 and 6 in 2001. The Government planned to offer 10 new oil and gas blocks in 2004. Because the Government had not yet announced the implementing regulations for the 2001 oil and gas law, major international companies were absent from the bidding on these new blocks (U.S. Embassy Jakarta, 2004b; Jakarta Post, 2003a§).

The Government gave approval for Pertamina to become a state-owned limited company in 2003. Under the Governmental decree, the company will divest ownership of its noncore assets within the next 2 years. The Government will decide within the next 2 years whether Pertamina must transfer its oil refineries and LNG plants to the Government. As the Indonesian economy continues to improve during the next several years, domestic demand for oil and gas was expected to increase. The Government hoped that Pertamina will discover more oil and gas to prevent the country from becoming a net oil importer by 2010 as many analysts have predicted (Jakarta Post, 2003b§).

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## EAST TIMOR (TIMOR-LESTE)

East Timor [Democratic Republic of Timor-Leste (Timor of the rising sun)] is located on the eastern part of the island of Timor. On the west is the Indonesian Province of Nusa Tenggara Timur; Australia is situated 500 kilometers south across the Timor Sea. East Timor became independent on May 20, 2002, after more than 400 years under Portugese rule, 25 years of conflict, a violent transition from Indonesian rule, and 2.5 years of United Nations administration. During the transition, the country's infrastructure was seriously damaged, and people were relocated to other places. With assistances from the Asian Development Bank, the multi-donor Trust Fund for East Timor, and the World Bank, the reconstruction of the country's infrastructure had made significant progress. Following a moderate 3% GDP increase in 2002, the economy contracted by about 3% in 2003 after the gradual withdrawal of the United Nations civil administration and peacekeeping operations that began early 2002 led to a decline in economic activity. East Timor has substantial oil and gas potential and the Government counted on the oil and gas sector to contribute a significant portion of its revenues to the budget. The ratification of the Timor Sea Treaty between Australia and East Timor will be significant for East Timor's future by allowing the exploitation of the Bayu-Undan gasfield and oilfield and the development of the Sunrise gasfield. Analysts estimated that during the next several years, East Timor's petroleum sector could provide revenue that accounts for up to 50% of GDP and 85% to 90% of the Government revenues and foreign exchange (Asian Development Bank, 2004).

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TABLE 1  
INDONESIA: PRODUCTION OF MINERAL COMMODITIES <sup>1</sup>

(Metric tons unless otherwise specified)

Commodity		1999	2000	2001	2002	2003
<b>METALS</b>						
Aluminum:						
Bauxite, wet basis, gross weight	thousand tons	1,116	1,151	1,237	1,283	1,263
Metal, primary <sup>c</sup>		106,000	160,000	180,000	160,000	180,000
Chromite sand, dry basis <sup>c</sup>		6,400	1,000	1,000	1,000	1,000
Copper:						
Mine, Cu content		766,027	1,012,054	1,048,694	1,171,726	1,005,837
Metal						
Smelter, primary		126,700	173,800	217,500	211,200	247,400
Refinery, primary		90,800	158,400	212,500	192,400	223,300
Gold, mine output, Au content <sup>2</sup>	kilograms	127,184	123,994	162,605	142,238	141,019
Iron and steel:						
Iron sand, dry basis		584,428	489,126	469,132 <sup>r</sup>	378,376 <sup>r</sup>	245,409
Metal:						
Ferroalloys:						
Ferronickel		44,068	47,749	47,769	42,306	43,894
Ferromanganese <sup>c</sup>		12,000	12,000	12,000	12,000	12,000
Pig iron, direct reduced iron	thousand tons	1,740	1,820	1,480	1,500	1,230
Steel, crude <sup>c</sup>	do.	2,890	2,850	2,780	2,460 <sup>r</sup>	2,040
Nickel:						
Mine output, Ni content <sup>3</sup>		89,100	98,200	102,000	123,000	143,000
Matte, Ni content		45,400	59,200	63,471	59,500 <sup>r</sup>	70,200
Ferronickel, Ni content		9,225	10,111	10,302	8,807	8,933
Silver, mine output, Ag content	kilograms	288,200	255,578	269,825	293,520	285,206
Tin:						
Mine output, Sn content		51,761	55,624	61,863	88,142	71,694
Metal		49,709	47,129	53,796	67,455	66,284
<b>INDUSTRIAL MINERALS</b>						
Cement, hydraulic	thousand tons	23,925	27,789	31,100	33,000 <sup>e</sup>	35,500 <sup>e</sup>
Clays:						
Bentonite <sup>c</sup>		5,213 <sup>4</sup>	5,000	5,000	5,000	5,000
Fire clay <sup>c</sup>	thousand tons	1,850	1,900	1,900	1,900	1,900
Kaolin powder <sup>c</sup>		21,389 <sup>4</sup>	15,000	15,000	15,000	15,000
Diamond: <sup>c</sup>						
Industrial stones	thousand carats	23	23	23	23	23
Gem	do.	7	7	7	7	7
Total	do.	30	30	30	30	30
Feldspar <sup>c</sup>		23,236 <sup>4</sup>	24,000	24,000	24,000	24,000
Gypsum <sup>c</sup>		5,707 <sup>4</sup>	6,000	6,000	6,000	6,000
Iodine <sup>c</sup>		74 <sup>4</sup>	75	75	75	75
Nitrogen, N content of ammonia	thousand tons	3,457	3,617	3,665	4,200	4,250
Phosphate rock <sup>c</sup>		617 <sup>4</sup>	630	600	600	600
Salt, all types <sup>c</sup>	thousand tons	650	650	680	680	680
Stone:						
Dolomite <sup>c</sup>		2,907 <sup>4</sup>	3,500	3,000	3,100	3,100
Granite	thousand tons	4,107	5,941	3,975	4,966	3,939
Limestone	do.	15,540 <sup>4</sup>	16,000 <sup>5</sup>	16,000 <sup>e, 5</sup>	16,500 <sup>e, 5</sup>	17,000 <sup>5</sup>
Marble <sup>c</sup>	cubic meters	702 <sup>4</sup>	1,000	1,000	1,000	1,000
Quartz sand and silica stone <sup>c</sup>		140,428 <sup>4, 5</sup>	145,000 <sup>5</sup>	145,000 <sup>5</sup>	145,000 <sup>5</sup>	145,000 <sup>5</sup>
Sulfur, elemental <sup>c</sup>		3,450	3,500	3,600	3,600	3,600
Zeolite <sup>c</sup>		569 <sup>4</sup>	400	400	400	400
<b>MINERAL FUELS AND RELATED MATERIALS</b>						
Coal:						
Anthracite		72,795	25,000	40,807	42,690	50,000
Bituminous	thousand tons	72,618	77,015	92,500	103,329	114,000
Gas, natural:						
Gross	million cubic meters	86,863	82,334	79,470	85,959 <sup>r</sup>	89,324
Marketed <sup>c</sup>	do.	49,500	45,100	44,000	51,000	54,000
Petroleum, crude including condensate	thousand 42-gallon barrels	547,610	516,070	489,460	432,000	413,000

See footnotes at end of table.

TABLE 1--Continued  
INDONESIA: PRODUCTION OF MINERAL COMMODITIES <sup>1</sup>

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<sup>6</sup>Estimated; estimated data are rounded to no more than three significant digits. <sup>7</sup>Revised.

<sup>1</sup>Table includes data available through August 30, 2004.

<sup>2</sup>Includes Au content of copper ore and output by Government-controlled foreign contractors' operations. Gold output by operators of so-called people's mines and illegal small-scale mines is not available but may be as much as 20 metric tons per year.

<sup>3</sup>Includes a small amount of cobalt that was not recovered separately.

<sup>4</sup>Reported figure.

<sup>5</sup>Cubic meters.

TABLE 2  
INDONESIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2003

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Locations of main facilities	Annual capacity <sup>e</sup>
<b>Aluminum:</b>				
Bauxite		PT Aneka Tambang Tbk (Government, 65%)	Kijang, Bintan Island, Riau	1,300
Metal		PT Indonesia Asahan Aluminum (Nippon Asahan Aluminum Co. Ltd. of Japan, 59%, and Government, 41%)	Kual Tanjung, North Sumatra	250
Cement		PT Indocement Tungal Prakarsa	Cirebon and Citeureup, West Java; Tarjun, South Kalimantan	15,400
Do.		PT Semen Andalas Indonesia	Aceh Besar	1,000
Do.		PT Semen Baturaja (Persero)	Baturaja-Ogan Komering Ulu, South Sumatera	1,250
Do.		PT Semen Bosowa Maros	Kabupaten Maros, Sulawesi Selatan	2,200
Do.		PT Semen Cibinong	Narogong, East Java	11,800
Do.		PT Semen Gresik (Persero)	Gresik and Tubar, East Java	5,000
Do.		PT Semen Padang (Persero)	West Sumatra	5,240
Do.		PT Semen Tonasa (Persero)	Pangkep, Sulawesi Selatan	3,590
Coal		PT Adaro Indonesia (New Hope Corp, 50%; PT Asminco Bara Utama, 40%; Mission Energy, 10%)	Paringin and Tutupan, South Kalimantan	22,000
Do.		PT Arutmin Indonesia (PT Bumi Resources Tbk, 80%, and Bakrie Group, 20%)	Mulia, Senakin, and Satui, South Kalimantan	11,000
Do.		PT Berau Coal (PT United Tractor, 60%; PT Armadian, 30%; Nissho Iwai, 10%)	Berau, East Kalimantan	13,000
Do.		PT Kaltim Prima Coal Co. (PT Rio Tinto Indonesia and British Petroleum Amoco, 49%; Government of East Kutai Regency, 31%; PT Tambang Batubara Bukit Asam, 20%)	Samarinda, East Kalimantan	18,000
Do.		PT Kideco Jaya Agung (Samtan Co. Ltd. of the Republic of Korea, 100%)	Pasir, East Kalimantan	12,000
Do.		PT Tambang Batubara Bukit Asam (state-owned)	Tanjung Enim and Ombilin, South Sumatra	19,000
<b>Copper:</b>				
Concentrate		PT Freeport Indonesia Co. (Freeport-McMoRan Copper & Gold Inc. of the United States, 81.28%; Government, 9.36%; others, 9.36%)	Ertzberg and Grasberg, Papua	800
Do.		PT Newmont Nusa Tenggara (Newmont Gold Mining Co. of the United States, 45%; Sumitomo Corp., 35%; PT Pukuafu Indah, 20%)	Sumbawa Island, West Nusa Tenggara	300
Metal		PT Smelting Co. (Mitsubishi Materials Corp., 60.5%; PT Freeport Indonesia Co., 25%; others, 14.5%)	Gresik, East Java	210
<b>Gas:</b>				
Natural	million cubic feet per day	ExxonMobil Oil Indonesia	Arun and Aceh, North Sumatra	1,700
Do.		Roy M. Huffington (subsidiary of HUFFCO Group of the United States)	Badak, East Kalimantan	1,000
Do.		Total Indonesia	Offshore East Kalimantan	2,100
Liquefied		PT Arun LNG Co. Ltd. (Government, 55%; Mobil Oil, 30%; Japan Indonesia LNG Co., 15%)	Balang Lancang and Aceh, North Sumatra	10,000
Do.		PT Badak LNG Co. Ltd. (Government, 55%; HUFFCO Group, 30%; Japan Indonesia LNG Co., 15%)	Bontang, East Kalimantan	7,900
Gold	metric tons	Aurora Gold Ltd. (100%)	Balikpapan, Central Kalimantan	60
Do.		PT Freeport Indonesia Co. (Freeport-McMoRan Copper & Gold Inc. of the United States, 81.28%; Government, 9.36%; others, 9.36%)	Ertzberg and Grasberg, Papua	110
Do.		PT Kelian Equatorial Mining (Rio Tinto Ltd, 90% and PT Harita Jaya Raya of Indonesia, 10%)	Sangatta, East Kalimantan	15
Do.		PT Newmont Minahasa Raya (Newmont Mining Corp., 80% and PT Tanjung Serapung, 20%)	Manado, North Sulawesi	1
Do.		PT Newmont Nusa Tenggara (Newmont Gold Mining Co. of the United States, 45%; Sumitomo Corp., 35%; PT Pukuafu Indah, 20%)	Sumbawa Island, West Nusa Tenggara	16
Do.		PT Prima Lirang Mining (Billiton BV of the Netherlands, 90% and PT Prima Maluku Indah of Indonesia, 10%)	Lerokis, Wetar Island	3

See footnote at end of table.

TABLE 2--Continued  
INDONESIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2003

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Locations of main facilities	Annual capacity <sup>e</sup>
Nickel:			
In ore	PT Aneka Tambang Tbk (Government, 65%)	Pomalaa, South Sulawesi and on Gebe Island	80
Do.	PT International Nickel Indonesia Tbk (Inco Ltd. of Canada, 59%; Sumitomo Metal Mining Co. Ltd. of Japan, 20%; others, 21%)	Soroako, South Sulawesi	70
In matte	PT Aneka Tambang Tbk (Government, 65%)	Pomalaa, South Sulawesi	24
Do.	PT International Nickel Indonesia (Inco Ltd. of Canada, 59%; Sumitomo Metal Mining Co. Ltd. of Japan, 20%; others, 21%)	Soroako, South Sulawesi	68
Nitrogen	PT Aseah-Aech Fertilizer (Government, 60% and other members of the Association of Southeast Asian Nations, 40%)	Lhokseumawe, North Sumatra	506
Do.	PT Pupuk Iskandar Muda (Government, 100%)	do.	506
Do.	PT Pupuk Kalimantan Timur (Government, 100%)	Bontang, East Kalimantan	1,010
Do.	PT Pupuk Sriwijawa (Government, 100%)	Palembang, South Sumatra	1,440
Petroleum, crude thousand barrels per day	Atlantic Richfield Indonesia, Inc. (subsidiary of Arco of the United States)	Arjuna and Arimbi, offshore, West Java	170
Do.	Maxus Southeast Asia Ltd. (subsidiary of Maxus Energy of the United States)	Cinta and Rama, offshore, Southeast Sumatra	95
Do.	Pertamina (Government, 100%)	Jatibarang, West Java, and Bunyu, offshore East Kalimantan	80
Do.	PT Caltex Pacific Indonesia (Texaco Inc., 50% and Chevron Corp., 50%, both of the United States)	Minas, Duri, and Bangko, central Sumatra	700
Do.	Total Indonesia (subsidiary of Compagnie Francaise des Petroles of France)	Handi and Bakapai onshore and offshore East Kalimantan	180
Steel, crude	PT Ispat Indo	Sidoarjo, Surabaya	700
Do.	PT Krakatau Steel (Government, 100%)	Cilegon, West Java	2,400
Do.	PT Komatsu Indonesia Tbk	Jakarta	8
Do.	PT Wahana Garuda Lestari	Pulogadung, Jakarta	410
Tin:			
In ore	PT Koba Tin (Malaysia Smelting Corp., 75% and PT Tambang Timah Tbk, 25%)	Koba, Bangka Island	25
Do.	PT Tambang Timah Tbk (Government, 65%)	Onshore and offshore islands of Bangka, Belitung, and Singkep	60
Metal	Mentok Tin Smelter (PT Tambang Timah Tbk)	Mentok, Bangka Island, South Sumatra	68
Do.	Koba Tin Smelter (PT Koba Tin)	Koba, Bangka Island, South Sumatra	25

<sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits.